

IN THE CLAIMS

Please amend the claims to read as follows:

Before Claim 1, please insert "We claim"

1. (currently amended) An X-ray tube (11/12) for high dose rates, in which an anode (31/32) and a cathode (21/22) are disposed opposite each other in a vacuumized internal chamber (41/42), electrons (e^-) being able to be accelerated to the anode by means of impressible high voltage, the cathode (21/22) comprising a thin layer of an electron (e^-) -emitting material, and the cathode (21/22) comprising a substrate substantially transparent for X-ray radiation (γ), wherein

the X-ray tube (11) is designed as an anode hollow cylinder (21) with a coaxial cathode hollow cylinder (31) inside.

2. (currently amended) The X-ray tube (11/12) according to claim 1, wherein the cathode (21/22) closes the vacuumized internal chamber (41/42) ~~toward~~ from the outside.

3. (currently amended) The X-ray tube (11/12) according to ~~one of the~~ claim 1 ~~or~~ 2, wherein the anode (31/32) comprises gold and/or molybdenum and/or tungsten and/or a compound of the metals, for conversion of the electrons (e^-) into X-ray radiation (γ).

4. (currently amended) The X-ray tube (11/12) according to ~~one of the~~ claim 1 ~~to~~ 3, wherein the cathode (21/22) comprises a thermionic emitter (72).

5. (currently amended) The X-ray tube (11/12) according to ~~one of the~~ claim 1 ~~to~~ 3, wherein the cathode (21/22) comprises a cold emitter (72).

6. (currently amended) The X-ray tube (11/12) according to claim 5, wherein the cold emitter comprises metal tips and/or graphite tips and/or carbon nano tubes.

7. (currently amended) A method for generating high dose rates with X-ray tubes (11/12), in which an anode (31/32) and a cathode (21/22) are disposed opposite each other in a vacuumized internal chamber (41/42), electrons (e^-) being accelerated to the anode (31/32) by means of impressible high voltage, a substrate substantially transparent for X-ray radiation (γ) being used in the cathode (21/22), and a thin layer or coating of an electron (e^-)-emitting material being applied to the substrate wherein

used as the anode is an anode hollow cylinder (21) with a coaxial cathode hollow cylinder (34) inside.

8. (currently amended) The method according to claim 7, wherein the cathode (21/22) closes the vacuumized internal chamber (41/42) toward from the outside.

9. (currently amended) The method according to ~~one of the claims~~ claim 7 ~~or~~ 8, wherein gold and/or molybdenum and/or tungsten and/or a compound of the metals is used for conversion of the electrons (e^-) into X-ray radiation (γ).

10. (currently amended) The method according to ~~one of the claims~~ claim 7 ~~to~~ 9, wherein a thermionic emitter is used in the cathode (21/22).

11. (currently amended) The method according to ~~one of the claims~~ claim 7 ~~to~~ 10, wherein a cold emitter is used in the cathode (21/22).

12. (previously presented) The method according to claim 11, wherein metal tips and/or graphite tips and/or carbon nano tubes are used for the cold emitter.

13. (currently amended) A method for producing an X-ray tube (11/12) for high dose rates, in which an anode (31/32) and a cathode (21/22) are disposed opposite each other in a vacuumized internal chamber (41/42), electrons (e^-) being accelerated to the anode (31/32) by means of impressible high voltage, a substrate substantially transparent for X-ray radiation (γ) being

used in the cathode ~~(21/22)~~, and a thin layer or coating of an electron (e^-)-emitting material being applied to the substrate wherein

the X-ray tube ~~(11)~~ is designed as an anode hollow cylinder ~~(21)~~ with a coaxial cathode hollow cylinder ~~(31)~~ inside.

14. The method according to claim 13, wherein the cathode ~~(31/32)~~ closes the vacuumized internal chamber ~~(41/42)~~ ~~toward~~ from the outside.